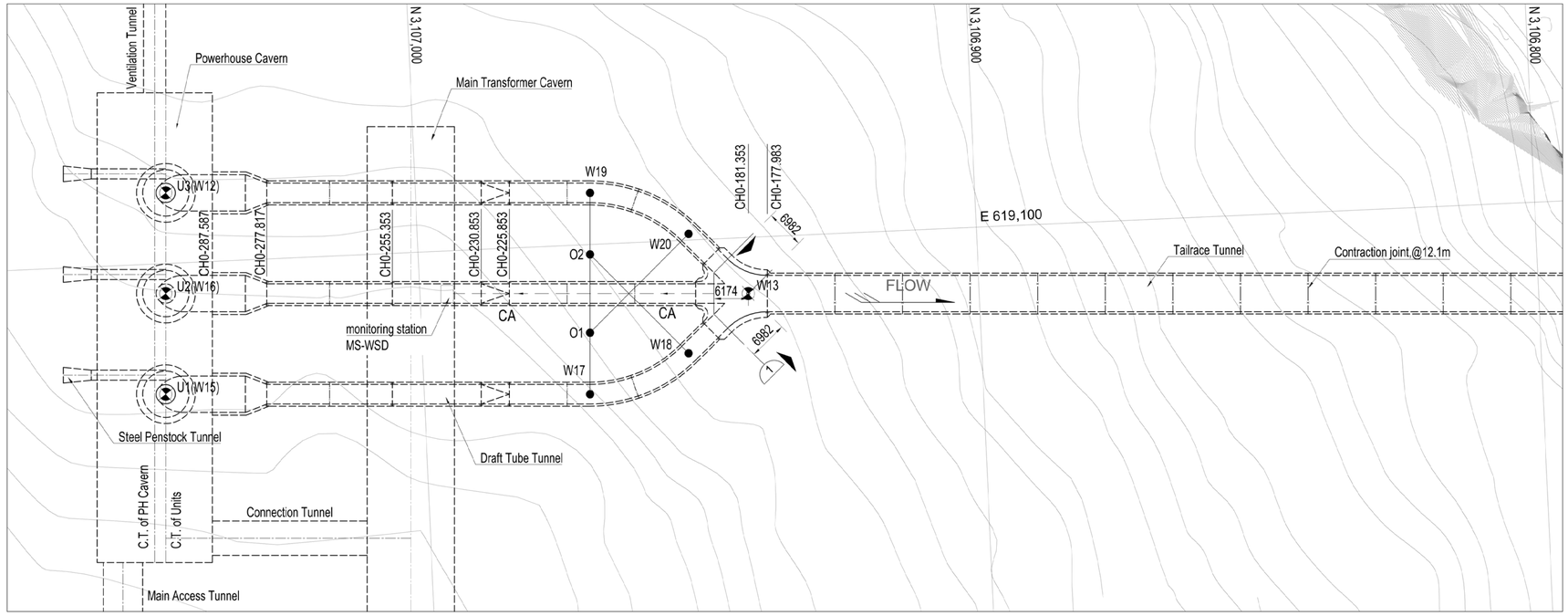
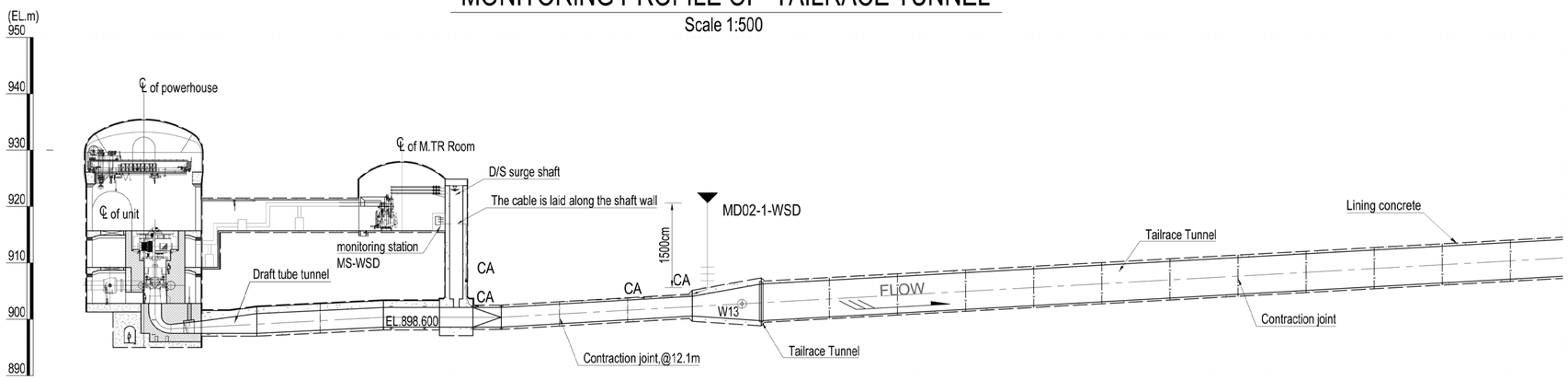
LAYOUT DRAWING OF MONITORING FOR TAILRACE TUNNEL

Scale 1:500



MONITORING PROFILE OF TAILRACE TUNNEL

Scale 1:500



OBSERVATION INSTRUMENT EQUIPMENT LIST

NO.	NAME	LEGEND	UNIT	QUANTITY	SYMBOL	REMARK
1	ROCK DISPLACEMENT METER		set	3	MD	Unbonded elastic wire resistance type ,Measuring range: 40mm; Resolution: 0.1% F.S;
2	HOLE FOR ROCK DISPLACEMENT METER		m	46.5		Borehole diameter Ø90mm, single hole depth 15.5m,including backfill grouting.
3	CABLE FOR UNBONDED ELASTIC WIRE RESISTANCE TYPE		m	260	CA	
4	CONVERGENT MEASURING POINT		set			The number of measuring points shall be calculated according to the monitoring section.
5	HUB BOX		set	1		Allow access to 20 instruments,Protect with a homemade protective box.
6	CABLE PROTECTION TUBE		m	190		50mm diameter galvanized steel pipe with wall thickness greater than 2.5mm.

NOTE

1. This set of drawings is the monitoring layout of tailrace tunnel.
2. All dimensions are in millimeters, and coordinates, chainage and elevation are in meters. The rest shall be subject to the figure.
3. Rock displacement meter is applied to monitor deep deformation of rock mass,one section are selected as shown on the drawing.
4. Technical requirements of convergence monitoring, please refer to UT1-C-845-CVL-DG-70006.
5. Besides deep deformation & convergence measurement, other monitoring items can be carried out as per actual conditions and request of Employer or onsite OE during tunnel construction.
6. All cables are protected by steel pipes. Attention shall be paid to prevent cables from being damaged during construction.
7. The monitoring station of tailrace tunnel is arranged at the Main Transformer Cavern.

Scale:
1:500 0 5 10 15 20 25m

REFERENCE DRAWINGS

UT1-C-070-CVL-DG-59002	EXCAVATION AND INITIAL SUPPORT DRAWINGS OF TAILRACE TUNNEL
UT1-C-845-CVL-DG-70004	LAYOUT DRAWING OF MONITORING FOR DIVERSION TUNNEL

SYMBOL AND LEGEND

FOR APPROVAL

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IT CAN BE CHANGED IN THE EXECUTION STAGE.
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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	20.APR.2022	FIRST ISSUE	CUI J.W.	YUAN Q.S.	LI W.G. CHEN S.L.

PROJECT TITLE

Upper Trishuli-1 HEP (216MW)

OWNER

OWNER'S ENGINEER

CONTRACTOR

Doosan Heavy Industries & Construction

DRAWING TITLE

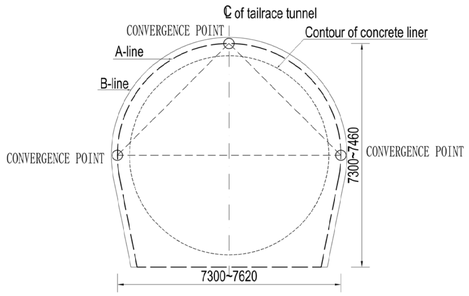
LAYOUT DRAWING OF MONITORING FOR TAILRACE TUNNEL(1/2)

INDEX	DRAWING NUMBER	SHEET NO.	REV. NO.
A	UT1-C-845-CVL-DG-70012-01	1 OF 2	0A

A1 (594 x 841 MM)

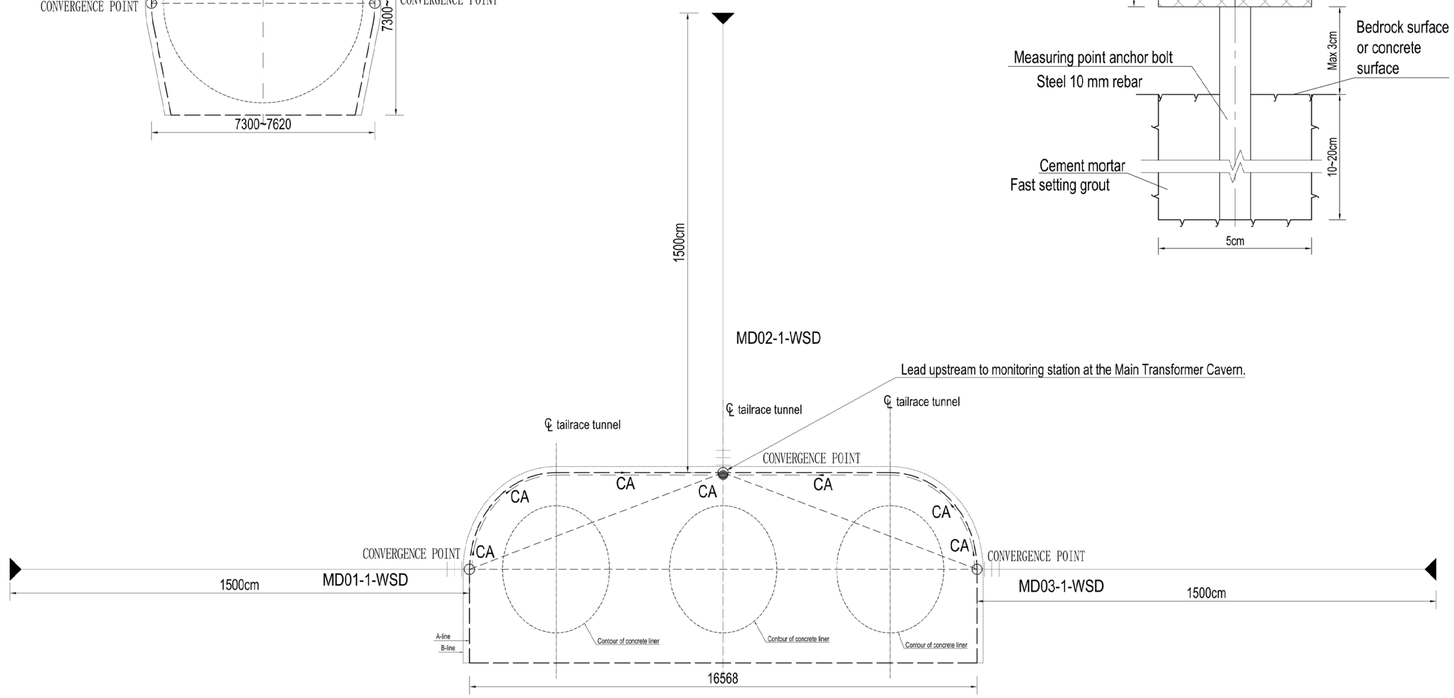
TYPICAL SECTION FOR CONVERGENCE MONITORING OF BARREL

Scale 1:100

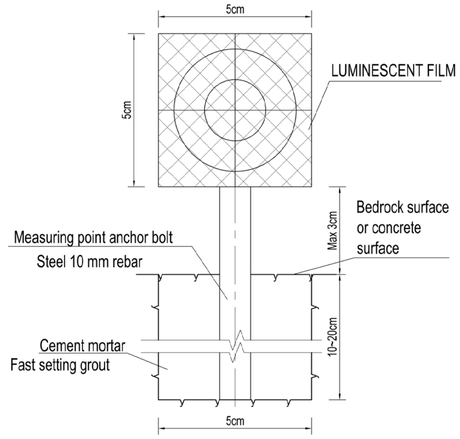


SECTION 1-1

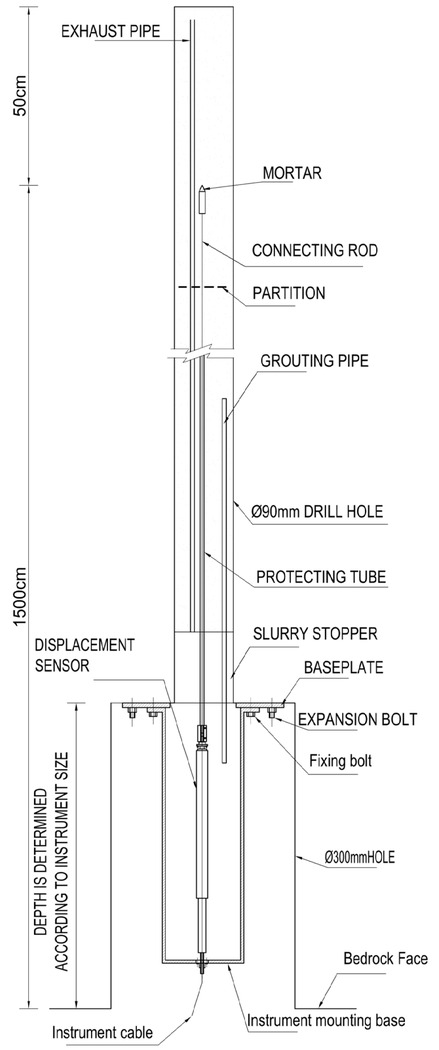
Scale 1:100



SKETCH OF TOTAL STATION REFLECTOR



SCHEMATIC DIAGRAM OF ROCK DISPLACEMENT METER (VERTICAL HOLE)



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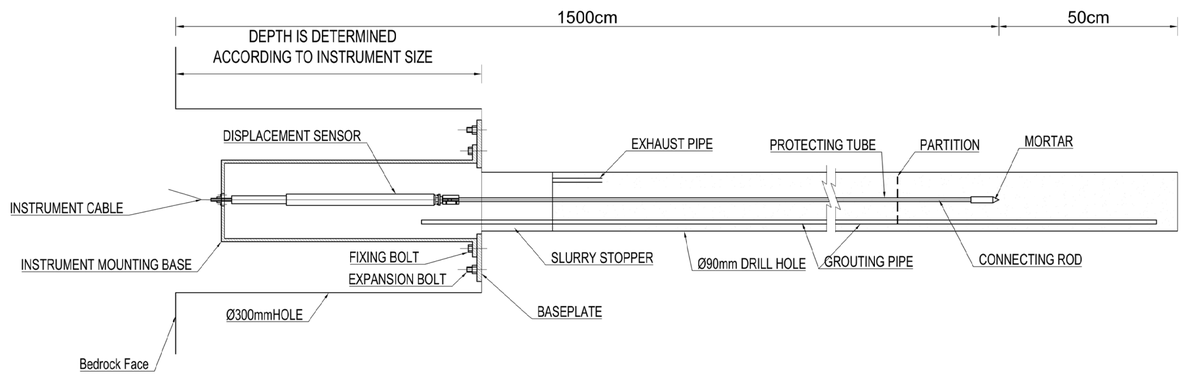

NOTE

1. This set of drawings is the monitoring layout of tailrace tunnel.
2. All dimensions are in millimeters, and coordinates, chainage and elevation are in meters. The rest shall be subject to the figure.
3. Other see sheet1.

Scale: 1:100 0 1 2 3 4 5m

REFERENCE DRAWINGS

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SYMBOL AND LEGEND

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Upper Trishuli-1 HEP (216MW)

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OWNER'S ENGINEER

CONTRACTOR

Doosan Heavy Industries & Construction

DRAWING TITLE

LAYOUT DRAWING OF MONITORING FOR TAILRACE TUNNEL(2/2)

INDEX	DRAWING NUMBER	SHEET NO.	REV. NO.
A	UT1-C-845-CVL-DG-70012-02	2 OF 2	0A

A1 (594 x 841 MM)